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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/963,368	11/03/1997	GARRY P. NOLAN	A-64260-2/DJ	9991

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EXAMINER

WESSENDORF, TERESA D

ART UNIT	PAPER NUMBER
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1639

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 08/963,368	Applicant(s) NOLAN, GARRY P.	
	Examiner T. D. Wessendorf	Art Unit 1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-21, 23-28, 30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) 23-27, 30 and 31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Prosecution Application

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/8/04 has been entered.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 16-21 and 28, drawn to a non-fusion molecular library and cellular library.
- II. Claims 23-27 and 30-31, drawn to a molecular library and cellular library encoding a fusion partner with the candidate bioactive peptide.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of

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operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are drawn to structurally different compounds (i.e., library). Group I is a non-fusion protein. Group II contains a fusion partner. A search for a non-fusion molecular library would not discover a fusion protein library, especially with the different fusion compounds to which the library is fused. These inventions are therefore distinct and different.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

Claim 23 is generic to a plurality of disclosed patentably distinct species comprising:

A). Fusion partner (applicants are to elect a single fusion partner. The list below is a generic sequence. A complete reply is an election of species from the elected generic sequence below.)

- i). Targeting sequence
- ii). Rescue sequence
- iii). Stability sequence
- iv). Dimerization sequence

Each of the sequences recited in each of the subgroups differ in structures, mode of actions and resultant effect. A prior art reference anticipating one species e.g., subgroup iv) would not render obvious the other dimer species.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with J. Keddie on 4/12/04 a provisional election was made with traverse to prosecute the invention of Group I, claims 16-21. Affirmation of this election must be made by applicant in replying to this Office action. Claims 23-27 and 30-31 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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Status of Claims

Claims 16-21, 23-28 and 30-31 are pending in the application.

Claims 22 and 29 have been canceled.

Claims 23-27 and 30 31 are withdrawn from consideration as being drawn to non-elected invention.

Claims 16-21 are under examination.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 16-21 and 28 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a practical asserted utility or a well-established utility for reasons advanced in the last Office action.

Response to Arguments

It is argued that the libraries is useful as research tool for identifying molecular targets and providing amino acid (a.a.) sequence that interacts with the targets. Applicants rely on the attached Masuda declaration that demonstrates that libraries of certain complexity have screening value.

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In reply, as declared by in the declaration only library of certain complexity has screening value. The Matsuda declaration states that library has a repertoire of binding specificity. But it is unclear as to said specificity especially of a repertoire. It is made more doubtful as the library contains no structure to invoke a specificity binding to also an undefined or unknown target. As declarant admits such specificity depends upon the complexity of a library, its size and randomization. As such the declaration describes only a specific peptide of 20-mer, which inhibits IL-4. There is nothing in the declaration that indicates or is drawn to a claim of an undefined structure of 4-100 amino acids.

Applicant's arguments that the individual components in a library has distinct utility from the library useful for screening are not controverted. However, the examiner's position is that the real world utility resides in the particular component in the library. Not in the repertoire of complex, random compounds of unknown constitution and/or binding specificity.

Applicants rely on PEP 2107.01, which discloses that research tools such as gas chromatograph, screening assays, and nucleotide sequence technique has a clear, specific and

unquestionable utility e.g., they are useful in analyzing compounds.

In reply, as pointed out by applicant, it is a screening assay that is stated to have the utility. The assay deals with specific components made to interact with another component to enable identification of a compound.

Applicant's argument that the complexity of the library allows one to have a confidence that the library will interact appears questionable. The question is whether that which is expressed is the desired component that has the binding specificity, as declared. Obviously, any kind of interaction can occur in a complex structure of 104 components.

Applicants acknowledged that each case is treated on its own merits. Nevertheless, argue that in the last few weeks several patents have issued for a claim to libraries.

In response, the case-to-case analysis still holds true irrespective of whether the Patent has recently been issued or issued several years ago.

Applicant relies on the Integra Life Science decision. Judge Newman's dissent is particularly noted in reference to patenting research tools. "...A product or method whose purpose is use in the conduct of research whether the tool is a ...assay kit-".

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In response each of the cited tools relate to a single, if not a particular component. An assay kit, for instance, contain a specific component useful in the intended assay, not a repertoire of complex, undefined collections of compounds binding to also an unknown compound.

Claims 16-21 and 28 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a practical asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

See the rejection above.

Claim Rejections - 35 USC § 112, first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 16-21 and 28 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to

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one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for reasons of record.

Response to Arguments

Applicants argue that on page 19, line 30 to page 20, line 9 the specification discloses that the candidate bioactive agents and candidate nucleic acids are randomized, either fully randomized or they are biased in their randomization, e.g. in nucleotide/residue frequency generally or per position. By "randomized" or grammatical equivalents herein is meant that each nucleic acid and peptide consists of essentially random nucleotides and amino acids, respectively. As is more fully described below, the candidate nucleic acids, which give rise to the candidate expression products, are chemically synthesized.

In response, it is not the definition of the candidate bioactive peptide that is at issue. Applicant recognized that the definition is known to a skilled artisan. The issue herein is the randomization of a molecular library of 104 undefined retroviral nucleic acid that encodes 4 to 100 amino acids. For example, it is not apparent from the broad description, the residues in the peptide sequence that are randomized. Are all the four-residue or the 100 residues randomized? Is the length

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of the compounds with respect to the random and biased residues the same or different in the 104 different retroviral nucleic acid sequence? What about the location and the kind of random sequences? Considering the library is but only one of the numerous undefined components of the broad compound. There remains the cell into which the random library is transfected, the determination of a candidate bioactive agent and other parameters or factors encompassed by the claims.

The undefined recitation of the components does not translate to an adequate description of the invention. Because of the high unpredictability of the peptide art, let alone, the library, a priori statement has never been made in the art. The teachings in the literature are specific for specific combinations of elements. It is well known in the art that protein expression is dependent on host cell. That is, the host cell will express only components that do not deleteriously affect its function or expression. Or will express the components in a library that would be representative of the compounds therein.

As stated in the last Office action, there are too numerous factors to determine for the successful practice of the claimed invention. A priori statement as to the applicability of a

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specifically defined factor, to date, has not been made to the likes of the instant claims.

[As suggested in the telephonic interview of April 12, 2004 reciting Seq. ID. 56 in the claims would obviate the rejection].

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-21 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention for reasons set forth in the last Office action.

Response to Arguments

In view of the applicant's arguments and some of the claims being drawn to non-elected inventions, the rejections under this statute no longer applies.

Claims 16-21 and 28, as amended, are rejected as follows:

1. It is not clear whether the library of retroviral nucleic acid sequences that encodes the amino acids are of the

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same length i.e., all four-residue length or of different length, absence positive teaching in the specification. The claimed retroviral nucleic acid sequences are unclear whether this is a vector containing the library. If so, it is suggested that applicants recite a vector to avoid any ambiguity. The term "candidate" in the context of the claimed compound (i.e., library) is indefinite. [This term would appear more appropriate for a screening method.]

Double Patenting

Claims 16-21, 23-28 and 30-31 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 47-50, 53 of copending Application No. 09/918,601 ('601 application) or claims 23-26 and 31-38 of S.N. 727,715 ('715 application). Although the conflicting claims are not identical, they are not patentably distinct from each other because of the reasons set forth in the last Office action.

Applicants submit that a provisional rejection of this type is properly addressed by allowance of one application, at which time a determination of double patenting can be made based on the issued claims.

In response, since no claims have yet been found allowable in any of the copending applications, hence, in the absence of terminal disclaimer, the **provisional** rejection is maintained.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16, 21 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Wetters et al (The EMBO Journal).

Wetters et al discloses at page 554, cols. 1 and 2, including Table II a retroviral vector which contains a fragment of human FMS to which a random portion in the FMS gene has been randomized. A random portion of at least 5 residues has been encoded by the gene random portions. A 104 focus forming units of the library has been obtained. Wetters further discloses a cellular library, NIH/3T3 cells to which the above library is transfected thereto. See further the description of the library at page 555, Discussion heading up to page 556, Materials and Methods heading. The claimed biased randomization of claim 28 is

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disclosed by Wetters, point mutations along the sequence of the fragment i.e., the random portions include the non-randomized (biased) residues.

The broad claimed library of undefined structure, which encodes 4-100 amino acids containing random portion is fully met by the library of Wetters.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 16-21 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wetters et al in view of Jenkins et al and Kay (USP 6,703,482).

Wetters does not disclose a library of at least 105 different retroviral nucleic acid sequences. However, Jenkins discloses at page 4277 library of size complexity of 104 and 105. It would have been obvious to one having ordinary skill in the art at the time the invention was made to increase the size or length in the library of Wetters. The claimed length as

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taught by Jenkins is conventionally obtained or made in the art. Kay similarly discloses the conventionality of making said e.g., 108 nucleic acid sequences in a library. One skilled in the art would be motivated to make a diverse library as it results in better or more lead compounds for e.g., drug discovery.

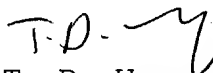
No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to T. D. Wessendorf whose telephone number is (571)272-0812. The examiner can normally be reached on Flexitime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (571)272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


T. D. Wessendorf
Primary Examiner
Art Unit 1639

Tdw
April 19, 2004